

IN THE SPECIFICATION:

Page 4, after paragraph [0030], please add the following new paragraph:

Fig. 20 is a diagrammatic detail view of a portion of an emitter 18 illustrated in Fig. 2.

Page 4, please replace paragraph [0031] with the following amended paragraph [0031]:

[0031] In Figure 1 an example is given of a non-scanning field emission backlight. This field emission backlight comprises a nanofiber emitter plate 18 and an anode plate 20. The spacing 24 between these plates is in a range from 0.5 mm to 3 mm, preferably about 1.5 mm. A spacer frame 16 is positioned between the anode and emitter plate to prevent deflection of either the anode or emitter plate under the vacuum pressure used for efficient operation of the backlight. The backlight further comprises vacuum seals 14 around the edges of the backlight and a getter (not shown in Figure 1) which maintains the vacuum in the field emission backlight. The getter can be any material that reacts with vapors that would unacceptably increase the pressure in the gap and damage the emitters during operation.

Page 5, please replace [0033], with the following new paragraph [0033]:

[0033] For example, the anode 20 includes a light-emitting layer, such as a non-structured phosphorescent or fluorescent layer. In one embodiment, the light-emitting layer is a mixture of phosphors, such as red, green and blue. Alternatively, phosphors emitting different colors of light may be separated into individual pixels or portions of a single pixel. In another alternative, the phosphors may be separated into separate, discrete layers that emit different light of different colors. The color point can be tuned to any desired color by adjusting the mix of light-emitting molecules. In one preferred embodiment, the color of a mixture of phosphors produces a white light at operating conditions. In one embodiment, a reflective film 22, such as an aluminum film, is applied between the phosphor layer and the gap to increase the luminance observed from the display by reflecting light emitted in the direction of the reflective film 22. The anode 20 may further comprise a transparent plate 12 and a light scattering layer (diffuser) 10 that helps to make the luminance uniform over the surface of the active display. The base 28 supports the emitters 18 and the conductive electrodes 26.

Please replace paragraph [0038] with the following amended paragraph [0038]:

[0038] In one embodiment, the electron emitter 18 comprises a conductive electrode 26 and isolated clusters 30 of carbon nanofibers grown *in situ* by chemical vapor deposition on the electrode as illustrated in Fig. 2. The *in situ* growth process produces fiber clusters 30, preferably isolated hemispheroidal clusters, having advantageous morphology and bond strength that is not produced by other methods of fabricating carbon nanofiber based emissive films.

Pages 7 and 8, please replace paragraphs [0040] through [0042] with the following amended paragraphs:

[0040] An electron emitter 18 comprises a conductive electrode 26 and isolated clusters of carbon nanofibers 30 grown *in situ* by chemical vapor deposition on an electrode. The nanofiber clusters emit electrons at low voltages and at high current densities, and adhere to the electrode. The electron emitter is supported by a substrate and is operably connected by a wiring pattern to a voltage source. Preferably, the nanofibers within a nanofiber cluster 30 are grown such that they are entangled, preventing individual nanofibers from moving across the gap between the cathode and anode of a field emission device.

[0041] The conductive electrode is joined to the substrate in a conventional manner, such as bonding or adhering a layer of metal to an insulating substrate, using sputtering, for example. The layer of metal may be conventionally patterned and etched to form a pattern of pixels and a wiring pattern, for example. Then, a catalytic precursor is deposited on the conductive electrode. The precursor comprises a catalyst for growing carbon nanofibers by chemical vapor deposition, a solvent and aggregated non-catalytic particles. For example, as illustrated schematically in Fig. 20, an emitter 18 may be formed when the catalytic precursor is applied to the pixels as a paste or slurry. The composition of the catalytic precursor is selected such that isolated carbon nanofiber clusters 30 are formed during nanofiber growth, and an adhesion layer 210 is capable of being formed between the electrode 26 and the nanofiber clusters 30 during preparation of the nanofibers, such as during a step of drying, heating and/or reducing the catalyst precursor and/or during growth of the nanofibers. For example, the adhesion layer 210 forms by a chemical reaction between the electrode and the compounds formed from the precursors during processing of the cathode 26.

[0042] An electron emitter comprises a conductive electrode and fibrous clusters 30 formed by *in situ* catalytic growth of nanofibers from a catalyst precursor. The precursor comprises, in one embodiment, a mixture of catalyst, non-catalytic particulates, a binder and a solvent. Preferably, the catalyst is selected to grow graphitic carbon nanofibers. Alternatively, nanofibers may be made of other emissive materials by conventional chemical vapor deposition processes using the process for preparing and activating clustered catalyst particulates as disclosed herein. The precursor is deposited on the conductive electrode, for example, by spraying, printing and other physical or chemical deposition procedures. The precursor may be deposited in a pattern and/or patterned after deposition using conventional processes such as masking or photolithography.